

Gamma ray flares of Flat Spectrum Radio Quasars: a statistical view

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Based on a 10 years sample of gamma-ray flares of FSRQs collected with Fermi and AGILE, I will report on a statistical study of variability for a sample of more than 300 FSRQs.

I will focus on waiting time between flares (defined as the time intervals between consecutive activity peaks; published paper: L. Pacciani, A&A, 2022, 658, 164). The investigation revealed that gamma-ray activity can be modeled with overlapping bursts of flares, with flares uniformly distributed within each burst, and a typical burst rate of 0.6/y.

Moreover, a statistically relevant fast component with timescale of order of days is revealed.

From these results, constraints on flares emission mechanisms were derived.

I will also discuss the preliminary results on an investigation of flares luminosity and duration in gamma-rays. Simple fitting models will be shown, and the correlation among peak luminosity and duration of gamma-ray flares will be discussed (paper in preparation).

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